

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date
12 May 2005 (12.05.2005)

PCT

(10) International Publication Number
WO 2005/043463 A1

(51) International Patent Classification⁷:

G06T 5/40

(74) Agent: COHEN, Julius, S.; Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

(21) International Application Number:

PCT/IB2004/052169

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date: 21 October 2004 (21.10.2004)

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

03104033.0 30 October 2003 (30.10.2003) EP

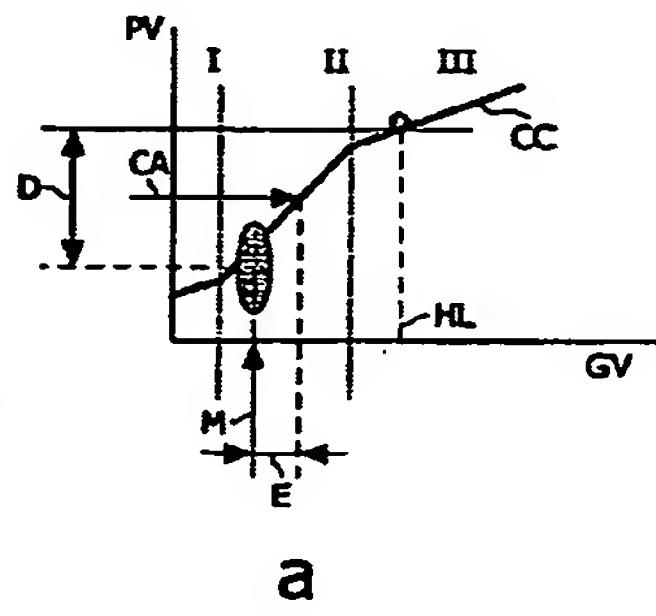
(71) Applicant (for all designated States except US): KONINKLIJKE PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

(72) Inventor; and

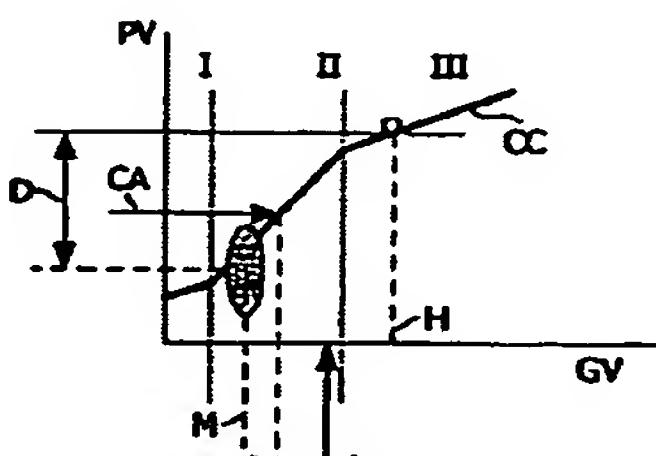
(75) Inventor/Applicant (for US only): NEDERPELT, Christianus, G., L., M. [NL/NL]; c/o Prof. Holstlaan 6, NL-5656 AA Eindhoven (NL).

[Continued on next page]

(54) Title: AN X-RAY EXAMINATION APPARATUS AND A METHOD OF CONTROLLING AN OUTPUT OF AN X-RAY SOURCE OF AN X-RAY EXAMINATION APPARATUS



(57) **Abstract:** An X-ray examination apparatus arranged with control means to control a dose of an X-ray source in accordance with a grey-level distribution of an acquired image. The X-ray examination apparatus (1) comprises the X-ray unit (2) arranged to communicate data to the control and processing means (10). The X-ray unit (2) is arranged to generate a beam of X-rays (1f) propagating from an X-ray source (1c). The X-ray source (1c) together with the X-ray detector (1b) can be rotated about an acquisition volume V about a rotation axis (1e). The control and processing means (10) comprises an image processing means (3), which is arranged to compress the first image into the second image. Upon a compression of the first image with the grey-level compression function the resulting second image is forwarded to the control means (6), which is arranged to compute an average pixel value of the second image and to compare it with a pre-stored reference value. In case the computed average value substantially deviates from the pre-stored reference value a dose control signal C is sent to the X-ray source (1c) in order to modify its settings. The X-ray examination apparatus further comprises a viewing station, whereto the resulting image is forwarded. The viewing station comprises a processor (5) an input device (5b) and a console (5a) whereon the image is displayed by means of a suitable user interface (5c). After the image has been analyzed, it can be stored in a suitable database (7).



b

WO 2005/043463 A1

BEST AVAILABLE COPY